Comment on tc-2022-89
Giacomo Bertoldi (Referee)

The paper applies the recent approach proposed by Marin et. al. 2020 to estimate snowmelt timing using Sentinel-1 radar backscattering to a mountainous, partially forested catchment. It shows promising results, especially for not too steep areas. The quality of the analysis is good and convincing.

I have only minor comments.

1. Introduction. Please define in a more precise way the paper's aims and formulate clear research questions.

2. Section 4.2 snow disappearance times. Since Landsat has a low overpass time and images are often cloud covered, please better quantify the errors and uncertainties in days for the snow disappearance time.

3. Section 5.2 Sensitivity - L233 - "the least accurate approximation in 2019" - please quantify in numbers, variance ...

4. L255 - besides slope, does the accuracy of results change also with the aspect?

5. Paragraph at line 315 - Interesting! Maybe an additional Figure can support this!

6. L324 - What do you mean by Data Fusion? Please explain better!